

REMARKS

Pending Claims

Claims 1-7, 9 and 10 have been examined. Claims 1 and 5 have been amended. Support for the amendments are found, for example, on page 7, line 23 to page 8 line 1. Claims 2, 3, 9 and 10 have been canceled as features of those claims have been incorporated into claims 1 and 5. No new matter has been added.

Information Disclosure Statement

The requisite statement or fee has been separately provided for the Examiner to consider the IDS filed January 9, 2008. Applicants respectfully request that the IDS and its cited references be considered in full.

Claim Objections

Claim 10 has been objected to for allegedly being substantially the same as claim 9. Claims 1 and 5 have been amended to include the element of claims 9 and 10 and claims 9 and 10 have been canceled. This objection has been rendered moot.

Claim Rejections Under 35 USC §102 or 35 USC §103

(A) Claims 1 and 4 have been rejected under 35 USC §102(b) as anticipated by or, in the alternative, under 35 USC §103(a) as obvious over Toshihiro JP 2002-367616 (Toshihiro). Applicants respectfully submit that Toshihiro does not disclose, teach or suggest the presently claimed invention as set forth in claims 1 and 4 for at least the following reasons.

Claim 1 recites as follows:

Claim 1 (currently amended): A method for forming a catalyst layer on a substrate constituting a membrane electrode assembly, whereby a catalyst layer is formed by allowing electrode powder to disperse by electrostatic force and extruding force to the substrate, comprising:

providing a screen having a mesh facing a substrate in a state of non-contact;

disposing an elastic body in a state of contact with a surface of the screen to supply the electrode powder to the screen;

applying voltage between the screen and the substrate so as to electrically charge the electrode powder supplied to the screen and to generate an electric field between the screen and the substrate in which the electrically charged electrode powder moves;

pressing the electrode powder supplied to the screen by the elastic body towards the screen and deforming the elastic body while being pressed against the screen to allow the elastic body to at least partly enter into the mesh of the screen so as to exude the electrode powder through the mesh of the screen towards the substrate; and

dispersing the electrode powder towards the substrate so as to adhere thereto by the electrostatic force and the extruding force of the elastic body.

(emphasis added.))

Applicants submit that at least the bolded feature above is not disclosed, taught or suggested by Toshihiro. First, Toshihiro does not disclose, teach or suggest “pressing the electrode powder supplied to the screen by the elastic body towards the screen and deforming the elastic body while being pressed against the screen.” That is, the roller 26 as described by Toshihiro is not an elastic body that can “at least partly enter into the mesh of the screen so as to exude the electrode powder through the mesh of the screen towards the substrate.” There is nothing in Toshihiro that would show that a roller is made of an elastic body that can deform to enter into the mesh to provide the extruding force. It is the present inventors who recognized that by providing electrostatic force and extruding force together eases the need for a high voltage that have caused problems in the past (e.g. dielectric breakdown and danger of igniting electrode powder). “According to the method of the present invention, dispersion of electrode powder from a screen to a substrate is carried out via both the electrostatic force and extruding force so that the desired coating pattern can be obtained even at a

low applied voltage.” (present specification, page 4, lines 6 to 9). Clearly, there is no recognition of this problem in Toshihiro, and hence, there is no reason to have an elastic body that can enter into the mesh in Toshihiro.

Claim 4 which depends from claim 1 is also not disclosed, taught or suggested by Toshihiro for at least the same reasons as claim 1.

For at least the foregoing reasons, claims 1 and 4 are neither anticipated by nor obvious from Toshihiro.

(B) Claims 2, 3, 5-7, 9, and 10 have been rejected under 35 USC §103(a) as being unpatentable over Toshihiro alone, or optionally further in view of Childress US 3081698. The Examiner states as follows:

While the nature of the roller material is not disclosed, it is the Examiner's position that one of ordinary skill would have readily recognized that the roller pushing particles through the openings would necessarily be made of a material which is elastic/resilient to provide good contact with the surface through which the particles are transported. A hard, abrasive material, e.g. metal or hard plastic, would have caused rubbing of the apertured plate 57, leading to rapid wear and introduction of worn particles as contamination into the coating being applied. Therefore the use of a soft elastic/resilient material would have been obvious both for predictable improvement in coating and economic considerations. Applicants are reminded that KSR 82 USPA 2d 1396 forecloses the argument that a specific teaching, suggestions, or motivation is required to establish a *prima facie* case of obviousness. KSR establishes that design incentives, market forces, predictability, use of ordinary skill and common sense, and ordinary capabilities or ingenuity of one skilled in the art articulated by the Examiner may be relied upon to support obviousness.

Optionally the Examiner provides Childress which discloses the use of soft/elastic rollers. Childress provides a similar electrostatic powder stenciling method in which it is expressly recognized to use a roller which is “soft”, or has “a felt-type of covering” (col. 2, 41-44 & col. 3, 17-23), which are inherently resilient or elastic, to push powder through a surface bearing openings through which powder is intended to be printed onto a surface with the design of the opening. It would have been obvious to one of ordinary skill in the art at the time the invention was made to carry out the method of Toshihiro by utilizing a soft/elastic roller body as would have

been obvious, or optionally in view of explicit teachings of Childress, to provide the benefits of ease of application and economic incentives.

Applicants respectfully traverse the above rejection. Toshihiro alone or in combination with Childress does not disclose at least “a means for pressing the electrode powder supplied to the screen by the elastic body towards the substrate, wherein the elastic body is deformed while being pressed against the screen and at least partly enters into the mesh of the screen so as to extrude the electrode powder from the mesh of the screen” as set forth in claim 5.

As stated previously, Toshihiro does not recognize the problem of high voltage as recognized by the present inventors, and therefore, there is no reason for Toshihiro to make the roller 26 elastic and deformable. As further evidence for not having any reason to make the roller elastic and deformable, Figs. 3 and 4 of Toshihiro show that the roller 26 is conductively connected to the back electrode 31, which indicates that the roller 26 is most likely made of rigid metal. There is no reason not to assume that all of the rollers 26 (including one in Fig. 7) described in Toshihiro are made of rigid metal. There is no teaching to the contrary. Moreover, Fig. 9 of Toshihiro shows the roller 26 not entering into the aperture by deformation, which is a further indication that the roller is rigid and not elastic.

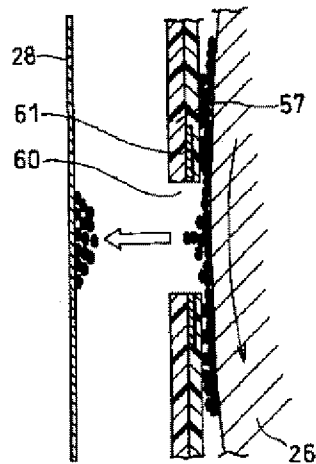
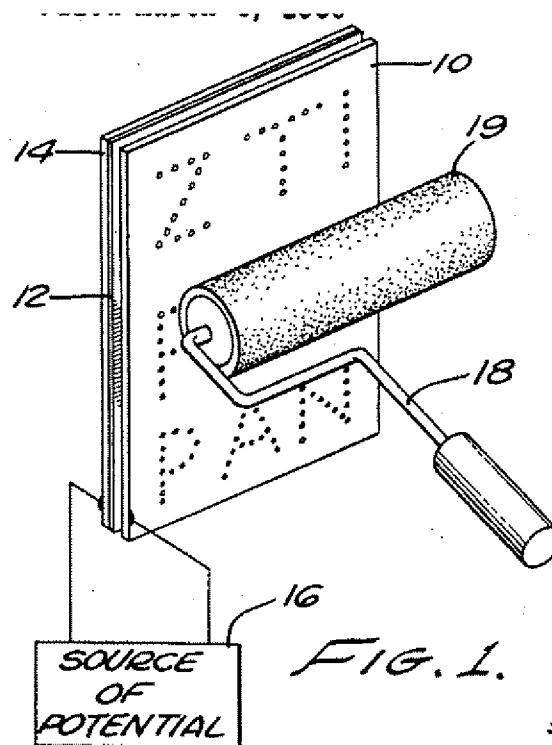


Fig. 9 of Toshihiro

Therefore, Toshihiro does not disclose, teach, or suggest any use of an elastic, deforming body for entering into a mesh and would not have rendered obvious the presently claimed invention.

The Examiner states that making the roller of “elastic/resilient material would have been obvious both for predictable improvement in coating and economic considerations.” However, it is respectfully pointed out that equally reasonable argument can be made that the roller be metallic and rigid to ensure good, hard contact with non-metallic surfaces through which the particles are transported. For example, if the control plate 57 is made of polymers with electrodes embedded therein, then there is no reason not to have the roller 26 made of rigid metal as there would not be any metal-to-metal abrasion. That is, there is nothing in the reference that tells one of ordinary skill what the control plate 57 is made of so the Examiner is basing his assertion that the roller 26 must be elastic on pure speculation, which should not be exercised in rejecting claims. KSR still requires that the any rejection be grounded on sound evidence and not on any speculation.

What Childress discloses is a felt-like type covering 19 over a roller 18, as shown below:



The roller 18 with the covering 19 "can be dipped into a suitable container of the fine powder so that the powder will loosely adhere to the surface thereof." "The roller is then rolled over the outer surface of the stencil." (col. 2, lines 42 and 46). The felt-like type covering 19 is most likely fibrous in material and is not "elastic." The felt-like type covering that is fibrous can be dipped into a container of fine powder to pick up the powder but an elastic body, which is most likely made of rubbery material, will not pick up fine powder as well as a felt-like type covering. That is, the elastic body of the presently claimed invention is not the same as the felt-like type covering. A person of ordinary skill in the art would not have characterized a fibrous felt-like type covering as "elastic," as the term denotes reversible deformable material. For the foregoing

reasons, Childress also does not disclose, teach, or suggest any use of an elastic, deforming body. Consequently, Toshihiro in view of Childress would also not have rendered obvious the presently claimed invention.

The above reasons apply to independent claim 5 but also to independent claim 1 and to their dependent claims. Therefore, pending claims 1, 4, and 5-7 would not have been obvious from the cited references for at least the above reasons.

In view of the foregoing amendments and remarks, Applicant respectfully requests reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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